Universal Switching Corporation

CE

Specification Sheet G2R14-001

Multi-Section 1x6 SMA Type DC-18GHz
Self-Terminating Switching Module
Series G2R14

January 2001

General

The relay-based G2R14 coaxial microwave switching module provides a flexible configuration for many applications. It provides up to six individual relay sections within a single module, using only three slots. The relay sections are bidirectional and can be used to select one of six inputs to a single output, or route a single input to one of six destinations. This is considered a 1xN type configuration.

When a port is not selected, it is automatically internally terminated into a 50 ohm load. Each relay element is individually shielded from each other and internal control circuitry.

Ultra-high reliability relay elements (>1,000,000 operations) are coupled with control and status circuitry. Sections can be field replaced without removing the module since each relay section is connectorized. The module also features hot-swap control technology for easy maintenance.

A unique power saving control circuit reduces DC power and cooling requirements for the module and increases overall reliability. Proper relay operation is verified by the internal CPU monitoring the relay coil current.

The number of sections included is determined by the model number. A reduced configuration can be further populated while in the field. Additional configurations are available on special order.

The suffix of the model number can specify some unique features or additional performance specifications (consult the factory). For control and DC power, the module must be installed into any G2 type mainframe controller. The mainframe must have either the -100, -D100, -600 or -D600 power supply configuration.

Applications

- ATE systems
- Communication installations
- Antenna routing
- Switching high speed ECL/PECL data
- Satellite control centers
- Ground station IF signal routing

Features

- High reliability relay elements
- DC to 18GHz bandpass (min)
- Flexible configuration expandable in field
- High performance stainless steel SMA signal connectors
- Hot-Swap module technology
- Plug-in relay elements
- Rugged aluminum shielded enclosure
- Built-in control and status circuitry
- Individually shielded sections

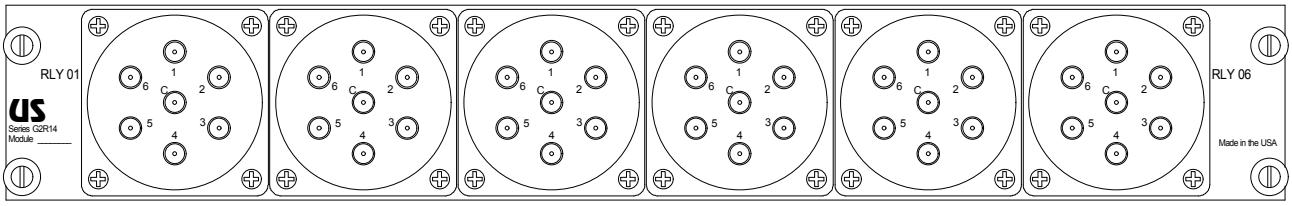
Configurations

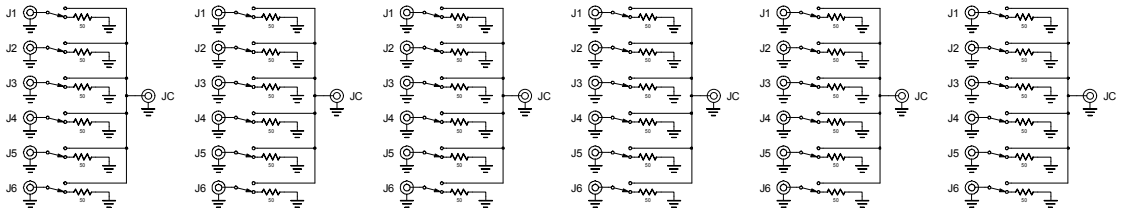
■	G2R14-11X6-60 . . . . .One 1x6 relay	3 slots
■	G2R14-21X6-60 . . . . .Two 1x6 relays	3 slots
■	G2R14-31X6-60 . . . . .Three 1x6 relays	3 slots
■	G2R14-41X6-60 . . . . .Four 1x6 relays	3 slots
■	G2R14-51X6-60 . . . . .Five 1x6 relays	3 slots
■	G2R14-61X6-60 . . . . .Six 1x6 relays	3 slots

NOTE-1: *A reduced number of sections can be further populated while in the field.*

NOTE-2: *Other relay configurations besides 1x6 are available such as 1x5, 1x4, and 1x3 or a mixture of elements. Contact the factory.*

Model G2R14-61X6-60





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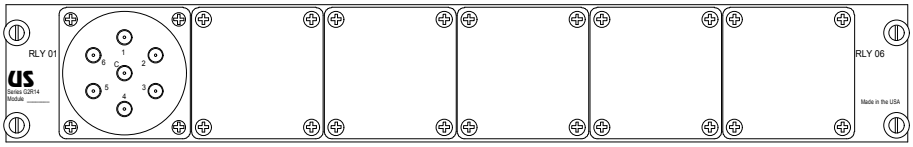
G2R14-11X6-60



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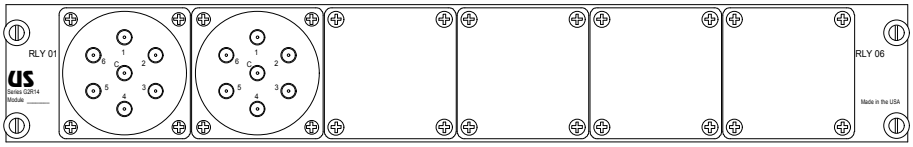

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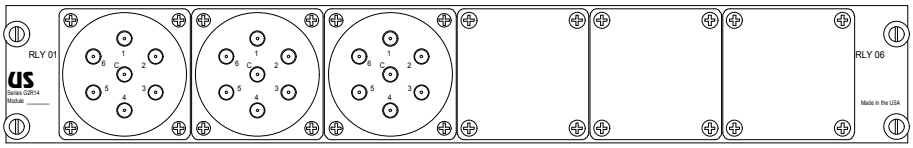

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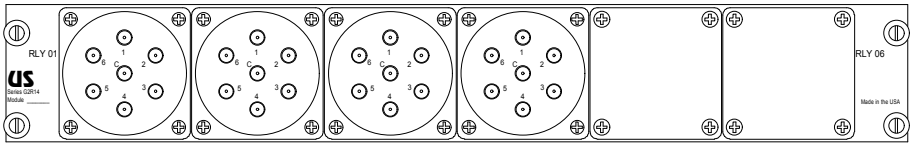

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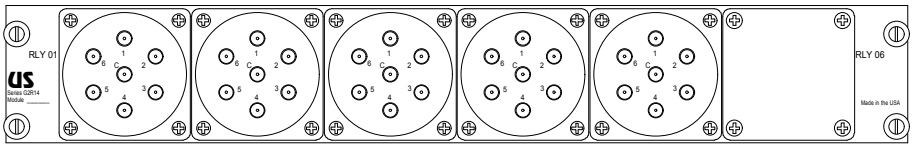
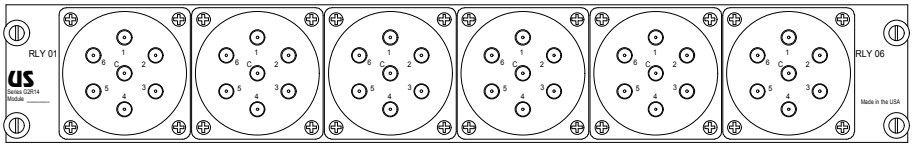


G2R14-61X6-60



Signal Specifications

Switching elements . . . . . .Relay-based
Operating mode . . . . . .Self-Terminating
Ports per relay section . . . .Six (1x6). others available
Number of sections . . . . . .One to six
Signal type . . . . . .Analog, bi-directional
Signal connector . . . . . .Stainless steel female SMA
Frequency range . . . . . .DC - 18GHz (min)
Impedance . . . . . .50 ohm
Insertion loss . . . . . .<0.30dB @ 4GHz
<0.35dB @ 8GHz
<0.40dB @ 12GHz
<0.50dB @ 18GHz
Repeatability . . . . . .<0.10dB max
Crosstalk isolation (min) . . .>75dB @ 4GHz
>70dB @ 8GHz
>65dB @ 12GHz
>60dB @ 18GHz
VSWR . . . . . .<1.2 : 1 @ 4GHz
<1.3 : 1 @ 8GHz
<1.4 : 1 @ 12GHz
<1.5 : 1 @ 18GHz
Maximum power . . . . . .100 watts @ 2.5GHz
40 watts @ 18GHz
Switching speed . . . . . .<50mS (plus control time)

General Specifications

Module size . . . . . .3 slot height
Control type . . . . . .G2 compatible
Sparing . . . . . .Hot-Swappable
Construction . . . . . .Shielded aluminum case
Mating SMA torque . . . . . .8 inch pounds MAX
DC power . . . . . .-100 or -600 configuration
+5V (digital), +15V (analog)
(or -200, -D200 by special order)
Weight . . . . . .<5lbs (six section)
Operating temp . . . . . .0 to +70C
Non-operating temp . . . . .-20 to +85C
Humidity . . . . . .0 to 95% (NC @ +25C)
Contact life . . . . . .>1,000,000 operations (per port)
MTBF . . . . . .>125,000 hours
(per MIL-HDBK-217F, N1
ground benign @ +25C)

Universal Switching's policy is one of continuous development, and consequently the company reserves the right to vary from the descriptions and specifications shown in this publication.

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